



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,553	03/25/2004	Vincent Bryan	64118.000044-Div	4926
71998	7590	12/03/2007	EXAMINER	
GOODWIN PROCTER / MEDTRONIC 901 NEW YORK AVENUE , NW WASHINGTON, DC 20006			CUMBERLEDGE, JERRY L	
ART UNIT		PAPER NUMBER		
3733				
MAIL DATE		DELIVERY MODE		
12/03/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/808,553	BRYAN ET AL.
	Examiner	Art Unit
	Jerry Cumberledge	3733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 September 2007.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 49-51 and 117-144 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 49-51 and 117-144 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 September 2007 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 09/10/2007.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 49, 51, 121, 122, 125-128 are rejected under 35 U.S.C. 102(b) as being anticipated by Frigg et al. (US Pat. 5,041,119).

Frigg et al. disclose an apparatus for preparing a space in the human spine to receive an insert between adjacent vertebral bodies, comprising: a shaft (Fig. 1, ref. 4) having a longitudinal axis (Fig. 1) a housing (Fig. 1, ref. 11) disposed at a distal end of said shaft said housing having an upstanding wall (Fig. 1, ref. 14A); a drive mechanism (Fig. 1, e.g. refs. 7, 8); a power source operably connected to said drive mechanism (column 1, lines 62-64, e.g. the drilling machine); and an abrading element (Fig. 1, ref. 10) mounted on said housing for movement by said drive mechanism by movement of the shaft (Fig. 1), said abrading element having at least one abrading surface selected to create a predetermined surface contour in one of the adjacent vertebral bodies as said abrading element is moved by said drive mechanism in a direction other than the direction of movement of the shaft (column 2, lines 17-20, e.g. the surface that is performing the drilling). The abrading element is detachable from said housing, since one could detach it if enough force is applied. The abrading element is mounted on the housing by an abrading element shaft (Fig. 1, ref. 9) connected to the abrading element (Fig. 1) and supported within the housing by a shaft support (Fig. 1, surface under ref.

9). The abrading element shaft extends perpendicularly from the abrading element surface (Fig. 1), and perpendicular from the longitudinal axis of the shaft (Fig. 1). The abrading element has an abrading surface (column 2, lines 17-20, e.g. the surface that is performing the drilling) and a surface opposite the abrading surface (Fig. 1, surface of ref 9). The surface opposite the abrading surface is provided with a beveled gearing surface (Fig. 1, surface of ref. 9). The drive mechanism comprises a drive shaft (Fig. 1, ref. 7) having a longitudinal axis (Fig. 1), supported by a journal provided with a pinion gear (Fig. 1, ref. 8), wherein the pinion gear cooperates with the beveled gearing surface of the abrading element to cause the abrading element to rotate about an axis different from the longitudinal axis of the drive shaft (Fig. 1).

Frigg et al. disclose an apparatus for preparing a space in the human spine to receive an insert between adjacent vertebral bodies, comprising: a shaft (Fig. 1, ref. 4); a housing (Fig. 1, ref. 11) disposed at a distal end of said shaft, the housing having an upstanding wall (Fig. 1, ref. 14A); a drive mechanism (Fig. 1, e.g. refs. 7, 8); a power source operably connected to said drive mechanism (column 1, lines 62-64, e.g. the drilling machine); and an abrading element (Fig. 1, ref. 10) mounted on said housing for movement by said drive mechanism (Fig. 1). The abrading element is mounted on the housing by an abrading element shaft (Fig. 1, ref. 9) connected to the abrading element (Fig. 1) and supported within the housing by a shaft support (Fig. 1, surface under ref. 9).

9). The abrading element shaft extends perpendicularly from the abrading element surface (Fig. 1), and perpendicular from the longitudinal axis of the shaft (Fig. 1). The abrading element has an abrading surface (column 2, lines 17-20, e.g. the surface that

is performing the drilling) and a surface opposite the abrading surface (Fig. 1, surface of ref 9). The surface opposite the abrading surface is provided with a beveled gearing surface (Fig. 1, surface of ref. 9). The drive mechanism comprises a drive shaft (Fig. 1, ref. 7) having a longitudinal axis (Fig. 1), supported by a journal provided with a pinion gear (Fig. 1, ref. 8), wherein the pinion gear cooperates with the beveled gearing surface of the abrading element to cause the abrading element to rotate about an axis different from the longitudinal axis of the drive shaft (Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 123 and 124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frigg et al. (US Pat. 5,041,119).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have constructed the angle between the abrading element shaft and the shaft being approximately 96° and the maximum height of the abrading element being nine millimeters, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 129 is rejected under 35 U.S.C. 103(a) as being unpatentable over being unpatentable over Frigg et al. (US Pat. 5,041,119) in view of Fattaleh (US Pat. 3,921,298).

Frigg et al. disclose the claimed invention except for the drive mechanism comprises a drive belt that interacts with the groove to provide a driving force to the abrading element. Frigg et al. disclose a shaft and gear mechanism for providing a driving force to an abrading element (Fig. 1).

Fattaleh discloses a surgical device that comprises a drive mechanism which comprises a belt (Fig. 3) that is used with an abrading element that has a groove in it (Fig. 2), the action of the belt causing the abrading element to spin (column 3, lines 51-64).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have substituted the drive mechanism of Frigg et al. with the drive mechanism of Fattaleh which comprises a belt mechanism, in order to achieve the predictable result of causing the abrading element to spin.

Claims 50 , 117-120 and 130-143 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frigg et al. (US Pat. 5,041,119) in view of Pomp (US Pat. 5,312,207).

Frigg et al. disclose the claimed invention except for the abrading element includes outwardly facing first and second abrading surfaces, and the first and second abrading surfaces are inclined relative to one another. The abrading element includes a leading edge configured as a bone cutting surface. The abrading element includes at

least one milling surface. The at least one milling surface is convex. At least one of the milling surfaces of the abrading element is tapered outwardly from a front surface of said form cutter. The abrading element comprises a groove about its perimeter. The abrading element having at least one convex abrading surface selected to create a concaval- convex contour in one of the adjacent vertebral bodies as said abrading element is moved by said drive mechanism. Frigg et al. discloses an abrading element that is used to create holes (column 2, lines 17-20).

Pomp discloses an abrading element (Fig. 6) that comprises outwardly facing first and second abrading surfaces (Fig. 6, ref. 29 and 31), and the first and second abrading surfaces are inclined relative to one another (Fig. 6). The abrading element includes a leading edge configured as a bone cutting surface (Fig. 6, ref. 27). The abrading element includes at least one milling surface (Fig. 6, ref. 28). The at least one milling surface is convex (Fig. 5). At least one of the milling surfaces of the abrading element is tapered outwardly from a front surface of said form cutter (Fig. 5, Fig. 6). The abrading element comprises a groove about its perimeter (Fig. 6, next to ref. numeral 16). The abrading element has at least one convex abrading surface selected to create a concaval- convex contour in one of the adjacent vertebral bodies as said abrading element is moved by said drive mechanism (e.g. Fig. 3, ref. 2, Fig. 16). The abrading element is used to create holes (column 2, lines 5-9).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have substituted the abrading element of Frigg et al. with the

abrading element of Pomp in order to achieve the predictable result of creating holes with the abrading element.

Claim 144 is rejected under 35 U.S.C. 103(a) as being unpatentable over being unpatentable over Frigg et al. (US Pat. 5,041,119) in view of Pomp (US Pat. 5,312,207) in view of Fattaleh (US Pat. 3,921,298).

Frigg et al. in view of Pomp disclose the claimed invention except for the drive mechanism comprises a drive belt that interacts with the groove to provide a driving force to the abrading element. Frigg et al. in view of Pomp disclose a shaft and gear mechanism for providing a driving force to an abrading element (Fig. 1).

Fattaleh discloses a surgical device that comprises a drive mechanism which comprises a belt (Fig. 3) that is used with an abrading element that has a groove in it (Fig. 2), the action of the belt causing the abrading element to spin (column 3, lines 51-64).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have substituted the drive mechanism of Frigg et al. in view of Pomp with the drive mechanism of Fattaleh which comprises a belt mechanism, in order to achieve the predictable result of causing the abrading element to spin.

Response to Arguments

Applicant's arguments with respect to claims 49-51 and 117-144 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Cumberledge whose telephone number is (571) 272-2289. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on (571) 272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLC



EDUARDO C. ROBERT
SUPERVISORY PATENT EXAMINER

FREDERICK R. SCHMIDT
DIRECTOR
TECHNOLOGY CENTER 3700